

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

STATEMENT OF BASIS

APPLICATION FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
AND
WASTE DISCHARGE REQUIREMENTS
TO
DISCHARGE TO STATE WATERS

Public Notice No. 7-00-06
Application NPDES No. CA0105040
Board Order No. 00-051

Ormesa Geothermal
FPL Energy Operating Services, Inc.
3300 Evan Hewes Highway
Holtville, CA 92250

On the basis of preliminary staff review and application of lawful standards and regulations, the Regional Board proposes to adopt waste discharge requirements for the discharge. The tentative proposed determinations are described below.

Description of Proposed Discharge

Oromesa Geothermal, Facility Owner, 700 Universe Boulevard, Juno Beach, Florida, 33408-0420, U.S. Bureau of Land Management, Land Owner, 1661 South 4th Street, El Centro, California, 92243, and FPL Energy Operating Services, Inc, P.O. Box 86, 3300 East Evans Hewes Highway, Holtville, CA 92250, operate the PEM Units 1 and 2 Projects (Figures 1 & 2). On February 1, 2000, FPL Energy Operating Services, Inc., submitted an application to update and combine their NPDES Permits 95-020 and 95-022 on the basis of common ownership, facility use and location, and common discharge point.

The discharger uses naturally occurring underground geothermal fluid to heat a working fluid which runs turbines, produces electricity and utilizes East Highline Canal water or ground water (Sweetwater Aquifer) in its cooling operations (Figure 3).

This permit pertains to the discharge of cooling tower blowdown water through a common pipeline to a common discharge point into the Holtville Main Drain.

The facility is designed for a maximum discharge of 1.44 million gallons-per-day (MGD) of cooling tower blowdown. The average daily discharge is 0.78 MGD when East Highline Canal water is used and 1.21 MGD when ground water is used. A maximum daily flow of 2.88 MGD cooling tower blowdown from both the PEM Units 1 and 2 facilities is transmitted through a common pipeline and discharged into the Holtville Main Drain in the SE 1/4, of Section 25, T15S, R16E, SBB&M. This water then flows through Holtville Main Drain to the Alamo River and finally into the Salton Sea.

The PEM Units 1 and 2 Projects are binary geothermal electrical generation facilities and associated geothermal well field located within the East Mesa Known Geothermal Resource Area and the Imperial Hydrologic Unit. The PEM Unit 1 Project is located approximately three miles north of Interstate 8 and approximately seven miles due east of Holtville, California on Federal geothermal leases in all or portions of Sections 23, 24, 25, and 26, T15S, R16E, and Sections 19, 20, 21, and 27 through 34, T15S, R17E, SBB&M. The PEM Unit 2 Project is located approximately four miles north of Interstate 8 and approximately seven miles due east of Holtville, California on Federal geothermal leases in all or portions of Sections 23, 24, 25, and 26, T15S, R16E, and Sections 19, 20, 21, and 27 through 34, T15S, R17E, SBB&M in Imperial County, California.

The PEM Units 1 and 2 electric production is combined with the electric production from other plants, transmitted through the Imperial Irrigation District's electric system, and sold to Southern California Edison Company.

The PEM Units 1 and 2 Projects utilize geothermal fluid produced from the geothermal leases and brought to the surface via production wells. The heat energy from the geothermal fluid is used to vaporize the working fluid isopentane. This expansion drives the turbine generators and converts mechanical energy into electrical energy. The working fluid vapor passes from the turbine into a shell-and-tube condenser, where cooling water from on-site evaporative cooling towers condenses the isopentane. The condensed isopentane is re-circulated.

The PEM Units 1 and 2 cooling water system consists of cooling towers, cooling water pumps, cooling water piping, make up water system and cooling water blowdown system that removes water from the cycle. The PEM Unit 1 facility utilizes two, separate five-cell and PEM Unit 2 utilizes a single four-cell mechanical draft cooling towers, respectively.

Make-up water for the cooling tower is derived from the East Highline Canal under contract with the Imperial Irrigation District (IID). Water is pumped from the canal to the plant via an underground pipeline. The PEM Units 1 and 2 facilities share a common cooling water make-up system including a common header, pumping station, and pipeline system. The average flow of the make-up water is 1,525 gallons per minute. As an emergency backup, make-up water may also be obtained from sweetwater wells.

Proposed Water Quality-Based Effluent Limitations

Effluent discharged from this facility could contain pollutants in sufficient quantities to affect receiving water quality. Pursuant to Section 13263, Article 4, Chapter 4 of the Porter-Cologne Water Quality Act, the Regional Boards are required to issue Waste Discharge Requirements for discharges that could affect the quality of the State's waters. Furthermore, Federal Regulations 40 CFR 122.1 requires the issuance of NPDES Permits, for pollutants discharged from a point source to the waters of the United States. The draft discharge requirements contain specific discharge limitations for selected pollutants. The rationales for each of the limitation is as follows:

Constituents

Basis for Limitations

Hydrogen Ion (pH)	Hydrogen Ion (pH) is a measure of Hydrogen Ion concentration in the water. A range specified between 6.0 to 9.0 ensures suitability of the biological life. This limitation has been adopted in the Basin Plan of the Region.
Total Suspended Solids (TSS)	High levels of suspended solids can adversely impact habitat. Untreated or improperly treated municipal wastewater can contain high amounts of suspended solids.
Total Dissolved Solids (TDS)	High levels of TDS can adversely impact aquatic life. The TDS limit is from the Basin Plan of the Region.
Settleable Matter	Settleable matter should not be present above the limit described. These limits are based on the Basin Plan of the Region.
Total Residual Chlorine	High levels of chlorine can have an adverse affect on aquatic life. Chlorine is one of the chemicals used in treating the cooling tower water.
Toxicity	Toxicity testing ensures that the effluent does not contain metals, chemicals, pesticides or other constituents in concentrations toxic to aquatic life.

Monitoring Requirements

Monitoring for those pollutants expected to be present in the Outfall 001 will be required as shown on the proposed monitoring and reporting program and as required in item no. 6 below.

Information Sources

While developing effluent limitations and receiving water limitations, monitoring requirements, and special conditions for the draft permit, the following information sources were used:

- (1) EPA NPDES Application Forms 1 and A dated November 11, 1999 and September 15, 1999 respectively.
- (2) 40 CFR Parts 117,122, 123, 124, 136, 302, 403, and 503.
- (3) Water Quality Control Plan (Colorado River Basin – Region 7) dated 1994.
- (4) Regional Board files related to Ormesa Geothermal NPDES permit CA0105040.
- (5) Porter-Cologne Water Quality Control Act with additions and amendments effective January 1, 2000.
- (6) Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California adopted March 2, 2000.
- (7) California Toxics Rule, published by May 18, 2000 by U.S. EPA.
- (8) National Toxics Rule (NTR), adopted by U.S. EPA on February 5, 1993.

Written Comments

Interested parties are invited to submit written comments on these draft waste discharge requirements. Comments should be submitted in writing by June 19, 2000 to:

Executive Officer
California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92250

The application number should appear on the first page of any submitted comments. All comments received by the above date will be considered in the formulation of the final determinations.

Public Hearing

The waste discharge requirements will be considered by the Regional Board at a public hearing to be held at the City Council Chambers, City of La Quinta, 78-495 Calle Tampico, La Quinta on June 28, 2000.

Register of Interested Persons

Any person interested in a particular application or group of applications may leave his/her name, address and phone number as part of the file for the application. This list of names will be maintained as a means for persons with an interest in an application to contact others with similar interests.

Information and Copying

Copies of the application, proposed waste discharge requirements and other documents (other than those that the Regional Board's Executive Officer maintains as confidential), are available at the Regional Board office for inspection and copying.

For additional information, interested persons may write to the above address, or call Jay Mirpour, Water Resource Engineer, at (760) 776-8966.